REMARKS

Claims 1 through 21 remain in this application.

Claim Rejections Under 35 U.S.C. 103

The Office Action rejected claims 1, 2-4, 5, 6-7, 10-17 and 19-21 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,584,071 to Kodialam et al. (the Kodialam reference) in view of an Internet Draft from the IETF PPVN WG entitled, "Generic VPLS Solution based on LPE Framework," by Radoaca et al. (the Radoaca reference) and further in view of U.S. Patent Application Publication 2005/0138008 to Tsillas (the Tsillas reference). However, the Tsillas reference was filed on December 22, 2003, after the filing of the present application on December 5, 2003. The Tsillas reference claims priority to provisional application no. 60/435,492 filed on December 20, 2002 (the Tsillas Provisional reference). The Tsillas Provisional reference fails to include all the figures and description as the Tsillas reference. Thus, any description and figures in the Tsillas reference, that is not supported by the Tsillas Provisional reference, is not prior art to this application. As such, further discussion herein will be made only to the disclosures in the Tsillas Provisional reference.

Furthermore, there are clear errors in the rejection in that neither the Kodialam reference nor the Radoaca reference nor the Tsillas Provisional reference, either alone or in combination, disclose or suggest the requirements of the claims. As such, the Office Action has failed to provide a prima facie case of obviousness under 35 U.S.C. §103(a).

Independent Claim 1 and Dependent Claims 2 through 20

The Office Action has failed to provide a prima facie case of obviousness under 35 U.S.C. §103(a)because it has not shown that the cited references disclose or suggests the elements, *inter alia*, of claim 1 of, "computing a plurality of sets of different homing configurations; wherein each homing configuration in each set of different homing configurations is computed by a respective iteration of steps; wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network." As described in the specification in paragraphs 7, 8 and 9, there are certain attributes to a VPLS, "First, more than one VPLS may be

included in a single MEN and, thus, certain PE nodes of that MEN may be a part of more than one VPLS. Second, with a multiple VPLS MEN, an L2PE node may support more than one VPLS, where each such VPLS has its own respective homing, that is, for each VPLS, that L2PE has a connection to one (and only one) PE node in the MEN. Given the various nodes, attributes, and connectivity described above and known in the art, complexities arise in traffic engineering with such parameters, that is, in establishing network communications, appropriate numbers of VPLSs, connectivity, and efficient use of bandwidth. These complexities arise both in establishing these parameters in a new network for the first time as well as modifying that network if one or more factors change over time, such as when a new VPLS is added. These complexities are further complicated by the desire to include 1+1 protection in a network, whereby a first set of parameters are provided, sometimes referred to as a primary network, but are supplemented by a second set of parameters, sometimes referred to as a secondary or backup network, to operate should the first network become inoperable." Thus, as described above, there are unique complexities in establishing paths for a plurality of VPLS' in a MEN.

The Kodialam reference nowhere discloses a VPLS or even computing a plurality of sets of different homing configurations. As described in the Kodialam reference at column 3, lines 2 through 10, it merely describes routing a path through a network, such as an LSP. As stated at column 6, lines 60 through 63, "Routing in accordance with the present invention evaluates and routes the LSP along paths through the network between ingress-egress point pair." There is no discussion of a VPLS in an Ethernet network or homing configurations, nevertheless, "computing a plurality of sets of different homing configurations; wherein each homing configuration in each set of different homing configurations is computed by a respective iteration of steps; wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network," as required by claim 1.

The Radoaca reference fails to add to the teachings of the Kodialam reference to suggest the requirements of the claims. Though the Radoaca reference describes VPLS in an Ethernet network in general, on page 11 it merely states that a VPLS provisioning includes the step of, "Each N-PE has knowledge about any remote N-PE [using N-PE-ID]. In order to get such information, an auto-

discovery protocol can be used (ex. BGP). Following this step, the LDP sessions and/or VPLS tunnels are provisioned/generated between the N-PE devices." Such a general statement fails to describe or suggest the complex steps performed by a processing device, *inter alia*, in claim 1 of, "computing a plurality of sets of different homing configurations; wherein each homing configuration in each set of different homing configurations is computed by a respective iteration of steps; wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network."

The Tsillas reference fails to add to the teachings of the Kodialam reference or the Radoaca reference. The Office Action states that,

> "While the combination of Kodialam and Radoaea discloses substantial features of the invention of claim 1, the additionally recited feature of the computing the homing configuration wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network is expressly disclosed by Tsillas in a related endeavor. Tsillas discloses as his invention an 'adaptive' spanning tree algorithm to work more optimally in particular network topologies. In one aspect of the invention, the spanning tree protocol is run over and first and second network connected by a third. network, wherein the spanning tree network is disabled in the third network. The third network may be, for example, a core network (e.g. MPLS Core) [0024] through which a first and second Layer 2 Networks are bridged [0027-0030]. In particular, Tsillas discloses the additionally recited feature of the step configuration wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network [Abstract] (Le, VPLS in Metro Ethernet bridged Networks {MEN}, employing the use of LSP techniques) [0023-0026] [0033]. It would thus be obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Kodialam and

> Radoaca with the above said additionally recited, as disclosed by Tsillas, for the motivation of providing a method and system for executing a revised spanning tree algorithm that performs more optimally in particular network topologies, such as in the 'bridging' of Layer 2 Networks by a core network (e.g., MPLS Core Network) [Abstract]."

The Tsillas Provisional reference only describes in paragraph 5 that "the PE devices run the STP protocol on the MEA access ports attached to L2PE devices but do not run STP on the MPLS ports or tunnels." There is no discussion in the Tsillas Provisional reference of how the PE devices are selected. As such, there is certainly no disclosure or suggestion of computing a plurality of sets of different homing configurations, or an iteration of steps to compute each homing configuration, wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network.

Since neither the Kodialam reference or the Radoaca reference or the Tsillas Provisional reference address the complexities of determining homing paths for a plurality of VPLS' in an Ethernet network, the references fail to teach or suggest the requirements of claim 1. Furthermore, as dependent claims to claim 1, claims 2 through 20 add further patentable matter to claim 1 and thus are further differentiated and patentable under 35 U.S.C. §103 over the Kodialam reference in view of the Radoaca reference.

Independent Claim 21

The Office Action has failed to provide a prima facie case of obviousness under 35 U.S.C. §103(a)because it has not shown that the cited references disclose or suggests the elements, *inter alia*, of claim 21 of, "determining a plurality of sets of different homing configurations; wherein each homing configuration in each set of different homing configurations is computed by a respective iteration of steps; wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network."

The Kodialam reference nowhere discloses a VPLS or even computing a plurality of sets of different homing configurations. As described in the Kodialam reference at column 3, lines 2

through 10, it merely describes routing a path through a network, such as an LSP. As stated at column 6, lines 60 through 63, "Routing in accordance with the present invention evaluates and routes the LSP along paths through the network between ingress-egress point pair." There is no discussion of a VPLS in an Ethernet network or homing configurations, nevertheless, "determining a plurality of sets of different homing configurations; wherein each homing configuration in each set of different homing configurations is computed by a respective iteration of steps; wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network," as required by claim 21.

The Radoaca reference fails to add to the teachings of the Kodialam reference to suggest the requirements of the claims. Though the Radoaca reference describes VPLS in an Ethernet network in general, on page 11 it merely states that a VPLS provisioning includes the step of, "Each N-PE has knowledge about any remote N-PE [using N-PE-ID]. In order to get such information, an auto-discovery protocol can be used (ex. BGP). Following this step, the LDP sessions and/or VPLS tunnels are provisioned/generated between the N-PE devices." Such a general statement fails to describe or suggest the complex steps, *inter alia*, in claim 21 of, "determining a plurality of sets of different homing configurations; wherein each homing configuration in each set of different homing configurations is computed by a respective iteration of steps; wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network."

The Tsillas reference fails to add to the teachings of the Kodialam reference or the Radoaca reference. The Office Action states that,

> "While the combination of Kodialam and Radoaca discloses substantial features of the invention of claim 1, the additionally recited feature of the computing the homing configuration wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network is expressly disclosed by Tsillas in a related endeavor. Tsillas

discloses as his invention an 'adaptive' spanning tree algorithm to work more optimally in particular network topologies. In one aspect of the invention, the spanning tree protocol is run over and first and second network connected by a third. network, wherein the spanning tree network is disabled in the third network. The third network may be, for example, a core network (e.g. MPLS Core) [0024] through which a first and second Layer 2 Networks are bridged [0027-0030]. In particular, Tsillas discloses the additionally recited feature of the step configuration wherein each iteration corresponds to a respective virtual private local area network service in the plurality of virtual private local area network services and for a respective selected layer two provider edge node in the Ethernet network [Abstract] (Le, VPLS in Metro Ethernet bridged Networks {MEN}, employing the use of LSP techniques) [0023-0026] [0033]. It would thus be obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Kodialam and Radoaca with the above said additionally recited, as disclosed by Tsillas, for the motivation of providing a method and system for executing a revised spanning tree algorithm that performs more optimally in particular network topologies, such as in the 'bridging' of Layer 2 Networks by a core network (e.g., MPLS Core Network) [Abstract]."

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Since neither the Kodialam reference or the Radoaca reference or the Tsillas Provisional reference address the complexities of determining homing paths for a plurality of VPLS' in an Ethernet network, the references fail to teach or suggest the requirements of claim 21.

CONCLUSION

For the above reasons, the foregoing amendment places the Application in condition for allowance. Therefore, it is respectfully requested that the rejection of the claims be withdrawn and full allowance granted. Should the Examiner have any further comments or suggestions, please contact Jessica Smith at (972) 240-5324.

Respectfully submitted,
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Dated: May 27, 2008

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